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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,719	01/17/2002	Satoshi Hasegawa	M2082.0000/P000	3594

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Steven I Weisburd Esq
Dickstein Shapiro Morin & Oshinsky LLP
1177 Avenue of the Americas 41st Floor
New York, NY 10036-2714

EXAMINER

HARPER, V PAUL

ART UNIT	PAPER NUMBER
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2626

DATE MAILED: 08/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/046,719	Applicant(s) HASEGAWA, SATOSHI	
	Examiner V. Paul Harper	Art Unit 2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1, 4, 7, 10, 13, 16, 19, and 22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In particular, the examiner could not locate the teaching: "wherein the feature detection processing section outputs a parameter indicating a soundless interval when the signal level is below a threshold for a set time."

The following rejections are made giving a reasonable interpretation to the claim language based on the teachings of the specification.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 4, 7, 10, 13, 16, 19, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case the phrase "when

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the signal level is below a threshold for a set time" is indefinite (see 112 1st rejection above regarding lack of support in the specification) because it is not clear what interval "for a set time" corresponds to. For example, could it be zero seconds?

The following rejections are made giving a reasonable interpretation to the claim language based on the teachings of the specification and the corresponding art.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 13, 16, 19, and 22 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. These are method claims preempting abstract concepts without a practical application, where a practical application must produce a "useful, concrete and tangible result." (see "Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility" pp. 1, 23 and 58).

Claims 14, 15, 17, 18, 20, 21 23, and 24 are rejected for failing to cure the deficiencies of the above rejected non-statutory claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Applicant's failure to adequately traverse the Examiner's taking of Official Notice in the last office action is taken as an admission of the fact(s) noticed, and thus those facts will henceforth be labeled as Applicant's Admitted Prior Art (AAPA).

2. Claims 1-9, 13, 14, and 16-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over ISO/IEC 11172-3 (as described in the prior art section of the specification, p. 2, Fig. 1 labeled prior art), hereinafter referred to as *Spec_Prior_Art*, in view of Nakajima et al. ("A Fast Audio Classification from MPEG Coded Data" ICASSP '99, vol. 6, May 1999) hereinafter referred to as Nakajima.

Regarding **claim 1**, *Spec_Prior_Art* describes the MPEG1/Audio layer 1 system and includes the following:

- a subband dividing section dividing inputted audio information including a sound signal into a plurality of frequency bands (p. 2, line 15, Fig. 1, item 111);
- a scaling section calculating a scaling factor, which indicates a multiplying power to a reference value, of each subband divided by the subband dividing section into each of the frequency bands, and aligning each dynamic range (Fig. 1, item 112); and

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- a coding processing section compressing and coding an output signal from the scaling section by using a MPEG system to output as coded bit stream data (Fig. 1, items 113-115).

But *Spec_Prior_Art* does not specifically teach "further including a feature detection processing section extracting features of the audio information on the basis of the scaling factors outputted from the scaling section, wherein the feature detection processing section outputs a parameter indicating a soundless interval when the signal level is below a threshold for a set time." However, the examiner contends that this concept was well known in the art, as taught by Nakajima.

In the same field of endeavor, Nakajima teaches a method for audio classification from MPEG coded data, by processing the sub-band energy levels over a segment [a set interval] where the result is compared to threshold to determine silence (§2, the scaling factors necessarily correspond to sub-band energy levels; see last ¶ in §2.1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify *Spec_Prior_Art* by specifically providing the features, as taught by Nakajima, because it is well known in the art at the time of invention for the purpose of identifying the content of the audio signal being processed for marketing, monitoring commercials, improved speech recognition (Kenyon et al. U.S. Patent 4,843,562, col. 1), and indexing, browsing, and retrievals from multimedia databases (Nakajima, §1, ¶1).

Regarding **claim 2**, *Spec_Prior_Art* in view of Nakajima teaches everything claimed, as applied above (see claim 1). In addition Nakajima teaches “the feature detection processing section includes a means of determining whether or not the audio information is of a voice signal interval on the basis of the scaling factors” (§1, ¶4, classified into speech; §2.2, “Music/Speech Characteristics” based on the distribution of energy; Fig. 1 and 2, n.b., the amplitude of each histogram corresponds to a sub-band level).

Regarding **claim 3**, *Spec_Prior_Art* in view of Nakajima teaches everything claimed, as applied above (see claim 1). In addition, Nakajima teaches “wherein the feature detection processing section includes a means of determining whether or not the audio information is of a soundless signal interval on the basis of the scaling factors” (§2.1, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 4**, this claim has corresponding limitations similar to the limitations in claim 1, and those limitations are rejected for the same reasons. In addition: “a signal level calculating section inputting thereto the scaling factor of each subband outputted from the scaling section, and calculating a signal level corresponding to the scaling factor; wherein the feature detection processing section extracts features of the audio information on the basis of the signal levels calculated by the signal level calculating section and outputs a parameter indicating a soundless interval when the signal level is below a threshold for a set time.” (§2, “Classification

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Algorithm” Figs. 1 and 2; the amplitude of each histogram corresponds to a scaled sub-band level where this information is used during feature detection; see last ¶ in §2.1, over a segment [a set interval] where the result is compared to threshold to determine silence).

Regarding **claim 5**, *Spec_Prior_Art* in view of Nakajima teaches everything claimed, as applied above (see claim 4). In addition, Nakajima teaches:

- the signal level calculating section inputs thereto the scaling factors in low-frequency bands outputted from the scaling section within a predetermined period of time to calculate the signal levels (§2, “Classification Algorithm” ; §2.1, ¶’s 1 and 2, low frequency; over segment implies a predetermined interval); and
- the feature detection processing section comprises: a calculating means of finding a maximum value and a minimum value of the signal levels calculated by the signal level calculating section (§2, certain level of variation; requires the determination of min/max--range), and
- calculating a difference between the maximum value and the minimum value (§2, variation); and
- a determining means of, when the difference value calculated by the calculating means is greater than or equal to a predetermined threshold value, determining that the audio information is of a voice signal interval, on the other hand, when the difference value is less than the threshold value, determining that the audio information

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is of a signal interval except for voice (§2, silence, if σ^2 is smaller than the predetermined threshold, otherwise the audio information is evaluated for speech, etc).

Regarding **claim 6**, *Spec_Prior_Art* in view of Nakajima teaches everything claimed, as applied above (see claim 4). In addition, Nakajima teaches:

- the signal level calculating section inputs thereto all of the scaling factors outputted from the scaling section within a predetermined period of time to calculate the signal levels (§1, from MPEG coded data; see Figs. 1 and 2); and
- the feature detection processing section includes a determining means of, when the signal levels calculated by the signal level calculating section are greater than or equal to a predetermined threshold value (§2, silence if σ^2 is smaller than the predetermined threshold, otherwise the audio information is evaluated for speech, etc),
 - determining that the audio information is of a sound signal interval (§2.2 “Music/Speech Characteristics”, not silence),
 - on the other hand, when the signal levels are less than the threshold value, determining that the audio information is of a soundless signal interval (§2, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 7**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

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Regarding **claim 8**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 9**, this claim has limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 13**, this claim has limitations similar to claim 1 and is rejected for the same reasons.

Regarding **claim 14**, this claim has limitations similar to claim 2 and is rejected for the same reasons.

Regarding **claim 16**, this claim has limitations similar to claim 4 and is rejected for the same reasons.

Regarding **claim 17**, this claim has limitations similar to claim 5 and is rejected for the same reasons.

Regarding **claim 18**, this claim has limitations similar to claim 6 and is rejected for the same reasons.

Regarding **claim 19**, this claim has limitations similar to claim 7 and is rejected for the same reasons.

Regarding **claim 20**, this claim has limitations similar to claim 8 and is rejected for the same reasons.

Regarding **claim 21**, this claim has limitations similar to claim 9 and is rejected for the same reasons.

3. Claims 10-12, 15, and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Spec_Prior_Art* in view of Nakajima and AAPA.

Regarding **claim 10**, *Spec_Prior_Art* describes the encoding portion of ISO/IEC 11172-3, but does not specifically describe "a stream dividing section, after inputting thereto bit stream data coded by a MPEG system, dividing the coded bit stream data composed of each subband divided into each frequency band into bit assigning information, scaling factor value indicating a multiplying power to a reference value, and coded data in units of each subband; and a decoding processing section executing a decoding process to the coded data divided by the stream dividing section in units of each subband to output as audio information." However, AAPA teaches the fact that the use of a decoder for the purpose of decoding data encoded according to ISO/IEC 11172-3 was well known in the art.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify *Spec_Prior_Art* such that a decoder is implemented, because a decoder is part of the ISO/IEC 11172-3 specification and required for the complete processing of the signal.

In addition, *Spec_Prior_Art* does not specifically teach:

- a feature detection processing section extracting features of the audio information on the basis of the scaling factor values outputted from the stream dividing section; and
- a signal level calculating section inputting thereto the scaling factor of each subband outputted from the stream dividing section to calculate a signal level;
- wherein the feature detection processing section extracts features of the audio information on the basis of the signal levels calculated by the signal level calculating section and outputs a parameter indicating a soundless interval when the signal level is below a threshold for a set time..

However, the examiner contends that these concepts were well known in the art, as taught by Nakajima.

In the same field of endeavor, Nakajima teaches a method for audio classification from MPEG coded data, where Nakajima processes the sub-band energy levels (§2, where the scaling factors necessarily correspond to sub-band energy levels since Nakajima is processing sub-band energy levels) and performs classification over a segment [a set interval] where the result is compared to threshold to determine silence (§2, silence, speech, etc.; see last ¶ in §2.1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify *Spec_Prior_Art* by specifically providing the features, as taught by Nakajima, because it is well known in the art at the time of invention for the purpose of identifying the content of the audio signal being processed for marketing, monitoring commercials, improved speech recognition (Kenyon et al. U.S. Patent 4,843,562, col. 1), and indexing, browsing, and retrievals from multimedia databases (Nakajima, §1, ¶1).

Regarding **claim 11**, *Spec_Prior_Art* in view of Nakajima and well known prior art teaches everything claimed, as applied above (see claim 10). In addition, Nakajima further teaches :

- the signal level calculating section inputs thereto the scaling factors in low-frequency bands outputted from the stream dividing section within a predetermined period of time to calculate the signal levels (§2, "Classification Algorithm" most of the sub-band energy is confined to the lower sub-bands and variations are compared); and
- the feature detection processing section comprises: a calculating means of finding a maximum value and a minimum value of the signal levels calculated by the signal level calculating section (§2, variation is determined), and
- calculating a difference between the maximum value and the minimum value (§2, variation is determined with a necessary calculation of min/max difference); and

- a determining means of, when the difference value calculated by the calculating means is greater than or equal to a predetermined threshold value, determining that the audio information is of a voice signal interval, on the other hand, when the difference value is less than the threshold value, determining that the audio information is of a signal (§2.1, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 12**, *Spec_Prior_Art* in view of Nakajima and well known prior art teaches everything claimed, as applied above (see claim 10). In addition, Nakajima further teaches:

- the signal level calculating section inputs thereto all of the scaling factors outputted from the stream dividing section within a predetermined period of time to calculate the signal levels (§2, time and frequency analysis, frames in one second); and
- the feature detection processing section includes a determining means of, when the signal levels calculated by the signal level calculating section are greater than or equal to a predetermined threshold value (§2.1, silence if σ^2 is smaller than the predetermined threshold);
- determining that the audio information is of a sound signal interval (§2, §2.1, “Silence Segment Detection” if not silence necessarily “sound”),

determining that the audio information is of a sound signal interval, on the other hand, when the signal levels are less than the threshold value, determining that the

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audio information is of a soundless signal interval (§2.1, silence, if σ^2 is smaller than the predetermined threshold).

Regarding **claim 15**, this claim has limitations similar to claim 3 and is rejected for the same reasons.

Regarding **claim 22**, this claim has limitations similar to claim 10 and is rejected for the same reasons.

Regarding **claim 23**, this claim has limitations similar to claim 11 and is rejected for the same reasons.

Regarding **claim 24**, this claim has limitations similar to claim 12 and is rejected for the same reasons.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to V. Paul Harper whose telephone number is (571) 272-7605. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

8/16/06

V. Paul Harper
Patent Examiner
Art Unit 2626

A handwritten signature in black ink, appearing to read "V. Paul Harper". The signature is written in a cursive, flowing style with a large initial "V".